UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDE
TOXIC SUBSTANCE

July 18, 2002

MEMORANDUM:

SUBJECT: **Lindane** (009001): **Reregistration Case** 0315. **Product Chemistry Guidelines 830.1550, 1600, 1620, 1700, 1750, 1800, 6314, 6316, 6317, 6320, and 7050. DP Barcode:** D276032. **MRID Nos.** 45426601, 45426602, 45426603, 45426604, 45426605, 45426606, 45426607, 45426608, 45426609, 45426610, and 45426611.

FROM: Thurston G. Morton, Chemist
Reregistration Branch 4
Health Effects Division (7509C)

THROUGH: Susan V. Hummel, Branch Senior Scientist
Reregistration Branch 4
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TO: Mark Howard/Betty Shackleford
Reregistration Branch 3
Special Review & Reregistration Division (7508C)

EXECUTIVE SUMMARY:

- Data on Preliminary Analysis, Certification of Limits, Enforcement Analytical Method, Oxidation/Reduction, Explodability, Corrosion Characteristics, and UV-Visible Absorption are adequate. GLN 830.1550, 830.1600, 830.1620, 830.1700, 830.1750, 830.1800, 830.6316, 830.6320, and 830.7050 are satisfied.

- Data on Oxidation/Reduction and Storage Stability are not adequate. Additional data are required for GLN 830.6314 and 830.6317.

Inquinosa Internacional, S.A. has submitted Product Chemistry data to support the registration of Lindane Technical EPA Reg. No. 40083-1.

A summary review follows in tabular format.

Attachments: Prod. Chem. Summary Table
Confidential Appendix A

cc w/ attachments: Chem F, Chron F. Morton

RDI:Team: 7/19/01; SVH:7/18/02

TM, Thurston Morton, Rm. 816D CM2, 305-6691, mail code 7509C

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REVIEW OF PRODUCT CHEMISTRY (SUBDIVISION D), GLNs 830.1550 TO 830.7950

Chemical Name (IUPAC, ANSI, etc.)	Lindane gamma hexachlorocyclohexane
Chemical Number (CAS; PC Code)	CAS No. 58-89-9 Shaughnessy No. 009001
Registration No.	EPA Reg. No. 40083-1
Type of Product (T, FI, MP, EP)	99.5% T
DP Barcodes	D276032

Inquinosa Internacional, S.A. has submitted product chemistry data for the 99.5% T in response to an Agency review (D274754, 6/7/01, T. Morton).

Table 1: Manufacturing and Impurity Data for the Inquinosa 99.5% T.

GLN	MRID	Status [1]	Details and/or Deficiency [2]
830.1550: Product Identity & Disclosure of Ingredients	CSF dated 6/7/01	A	See Confidential Appendix A.
830.1600: Starting Materials & Manufacturing Process	45426601	A	See Confidential Appendix A.
830.1620: Description of the Product Process	45426601	A	See Confidential Appendix A.
830.1670: Discussion of Formation of Impurities	45426601	A	See Confidential Appendix A.
830.1700: Preliminary Analysis	45426602, 45426603, 45426604, 45426605	A	See Confidential Appendix A.
830.1750: Certification of Limits	CSF dated 6/7/01	A	See Confidential Appendix A.
830.1800: Analytical Methods	45426606	A	See Confidential Appendix A.

[1] A = Acceptable; N = Unacceptable (see Deficiency); N/A = Not Applicable.
[2] Refer to CBI Appendix A for details.

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Table 2: Physical and Chemical Properties for the Inquinosa 99.5% T.			
GLN	MRID	Status[1]	Result[2] or Deficiency
830.6302:Color	00072468	A	White
830.6303:Physical State	00118743	A	Crystalline
830.6304:Odor	00102995	A	Odorless
830.6313:Stability	00072468	A	Stable to light, heat, air, and strong acids. Decomposes to trichlorobenzenes and HCl in alkali.
830.6314:Oxidizing or Reducing Action	45426607	N	The European Commission test method for oxidizing properties, A.17, was used. Lindane was test for oxidizing action by mixing 2 parts lindane with 1 part wood meal into a small pile. The pile was then ignited. The flame was extinguished as soon as the lighter was quenched. No information was provided concerning the reducing properties of lindane.
830.6315:Flammability		N/A	
830.6316:Explodability	45436608	A	Lindane was tested for thermal and mechanical sensitivity and did not show any explosive properties. The European Commission test method for explosive properties, A.14, was used.
830.6317:Storage Stability	45426609	N	Technical lindane was tested for stability after accelerated storage at 54° C for 14 days. Data showed that lindane is stable in these conditions. However, storage stability data for periods greater than 14 days was not determined.
830.6319:Miscibility		N/A	
830.6320:Corrosion Characteristics	45426610	A	Lindane is packed in polyethylene bags which has not shown any evidence of damage. Lindane is nearly inert except in the presence of strong oxidizing or reducing agents which will not be present in the packing material.
830.7000:pH		N/A	
830.7050:UV/Visible Absorption	45426611	A	No absorption maximum was observed. No significant modification observed (within the range of 200-800 nm) between the spectrum obtained in neutral medium and those obtained in acid and basic medium. No absorption occurred above 290 nm in neutral medium.
830.7100:Viscosity		N/A	
830.7200:Melting Point	00118743	A	112° C
830.7220:Boiling Point		N/A	
830.7300:Density, Bulk Density, or Specific Gravity	00072468	A	1.85
830.7370:Dissociation Constant		N/A	
830.7550:Octanol/Water Partition Coefficient (Shake Flask Method)	00160130	A	3135

Table 2: Physical and Chemical Properties for the Inquinosa 99.5% T.			
GLN	MRID	Status[1]	Result[2] or Deficiency
830.7560:Octanol/Water Partition Coefficient (Generator Column Method)		N/A	
830.7570:Octanol/Water Partition Coefficient (Estimation by Liquid Chromatography Method)		N/A	
830.7840:Solubility (Shake Flask Method)	00118712	A	At 20° C in gm/100 gm Acetone: 43.5 Methanol: 7.4 Pentane: 2.2 Petroleum ether (60-80): 2.7 Petroleum ether (100-120): 3.5
830.7950:Vapor Pressure	00118743	A	9.4×10^{-6} mm Hg 20° C
[1] A = Acceptable; N= Unacceptable (see Deficiency); N/A = Not applicable. [2] For example, "brown" for 830.6302; "155° C" for 830.7220.			

Attachments: Confidential Appendix A